



RECEIVED

JUN 26 2003

Technology Center 2600

REMARKS

This Amendment responds to the Office Action of April 4, 2003. The Examiner indicated that Claims 1-19 are pending and Claims 1-19 are rejected. The Examiner also objected to the drawings.

With this Amendment, Claims 1, 13 and 19 are amended and Claims 1-19 are submitted for reconsideration and allowance. Replacement FIGS. 2-5, 8 are presented in this Amendment.

This Amendment is prepared following guidelines published in the USPTO Revised Notice of "AMENDMENTS IN A REVISED FORMAT NOW PERMITTED" published in the Official Gazette on February 25, 2003.

Drawings

The Examiner objected to FIGS. 1-5 as not including the marking "PRIOR ART." With respect to FIG. 1, FIG. 1 is considered to include at least one feature not taught in the prior art. As disclosed in the application at page 4, lines 4-5, "FIG. 1 illustrates an embodiment of a disc drive 100 including a head 110 with one or more thermal restraining layers". A head with one or more thermal restraining layers, as disclosed in the application, is considered to be not taught in the prior art. Reconsideration and withdrawal of the objection to FIG. 1 is therefore requested.

With this Amendment, replacement FIGS 2-5 are presented that include the marking "PRIOR ART" as requested by the Examiner. Reconsideration of the objections to FIGS. 2-5, as presently replaced, and approval of the replacement FIGS. 2-5 is requested.

The Examiner also objected to the figures as not showing a feature "bonding film between the second restraint layer and the third layer" as recited in claim 7. With this Amendment, a new reference number "642" is added to a replacement FIG. 8 and also to the specification to better emphasize an example of the feature recited in Claim 7. The specification is

amended to recite: "Very thin films, such as a bonding film 642, of intermediate materials can be deposited to improve bonds between layers of dissimilar materials." Approval of the replacement FIG. 8 and the amendment to the specification is requested. Reconsideration and withdrawal of the objection to Claim 7 is requested.

Rejection - 35 USC § 102 - Koshikawa et al '543

The Examiner rejected Claims 1-19 under 35 U. S. C. 102(b) over Koshikawa et al (US 5,898,542).

With this Amendment, Claim 1 is limited to a requirement that the first restraint layer has a thickness that is large enough to compensate effectively for thermal expansion of the substrate and the transducer. With this Amendment, method Claim 13 is limited to a requirement D. effectively compensating for thermal expansion of the substrate and the transducer by setting a thickness of the first restraint layer that is large enough to compensate effectively for thermal expansion of the substrate and the transducer. With this Amendment, Claim 19 is limited to a requirement that the means for restraining has a thickness large enough to compensate for thermal expansion of the substrate and the magnetic transducer. Basis for these amendments is found at page 13, lines 14-16 of the specification.

Koshikawa et al. does not teach or suggest a restraint layer. Koshikawa et al. instead teaches a protection layer 5 of Al_2O_3 . Koshikawa et al. does not teach that the protection layer 5 can be used for restraint of thermal expansion. In particular, Koshikawa et al. does not teach or suggest a restraint layer that has a thickness that is large enough to compensate effectively for thermal expansion of the substrate and the transducer as presently claimed in amended independent Claims 1, 13, 19 and the claims 2-12, 14-18 that depend therefrom.

Reconsideration of the 35 USC 102(b) rejection of Claims 1-19 over Koshikawa et al., as presently amended, and allowance of Claims 1-19 is therefore requested.

Rejection - 35 USC § 102 - Okai et al. '045

The Examiner rejected Claims 1-11, 13-19 under 35 U.S.C. 102(b) over Okai et al (US 5,687,045).

As mentioned above in connections with the discussion of the Koshikawa et al. rejection, the Claims are amended to include a limitation to the restraint layer having a thickness large enough to compensate effectively for thermal expansion of the substrate and the transducer.

Okai et al. does not teach or suggest a restraint layer. Okai et al. instead teaches a protective layer 17 of $\text{Al}_2\text{O}_3\text{-ZrO}_2$ or ZrO_2 . Okai et al. does not teach that the protective layer 17 can be used for restraint of thermal expansion. In particular, Okai et al. does not teach or suggest a restraint layer that has a thickness that is large enough to compensate effectively for thermal expansion of the substrate and the transducer as presently claimed in amended independent Claims 1, 13, 19 and the claims 2-11, 14-18 that depend therefrom.

Reconsideration of the 35 USC 102(b) rejection of Claims 1-19 over Okai et al., as presently amended, and allowance of Claims 1-11, 13-19 is therefore requested.

Information Disclosure Statement of April 30, 2001

Applicant has not received an initialled copy of the Information Disclosure Statement of April 30, 2001. A copy is enclosed. Applicant requests an initialled copy of the Information Disclosure Statement.

Concluding Remarks

With the invention as presently claimed in Claims 1-19, a head with a restraint layer is provided that has a thickness that is large enough to compensate effectively for thermal expansion of the substrate and transducer. As pointed out in

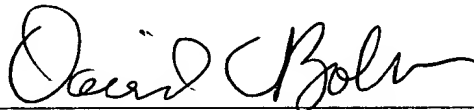
the specification at page 9, lines 11-14, the dimensions and material properties can be selected experimentally to limit protrusion of the transducer beyond the substrate over an operating temperature range.

The Application appears to be in condition for allowance, and favorable action is requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

By: 
David C. Bohn, Reg. No. 32,015
Suite 1600 - International Centre
900 Second Avenue South
Minneapolis, Minnesota 55402-3319
Phone: (612) 334-3222 Fax: (612) 334-3312